

### Trend Study 25C-20-98

Study site name: Baldys .

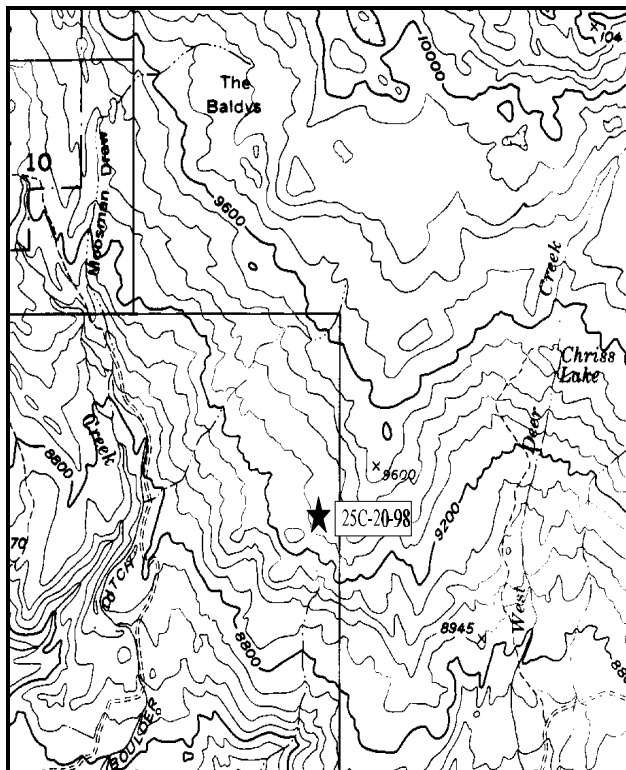
Range type: Quaking Aspen .

Compass bearing: frequency baseline 120 M degrees.

Footmark (first frame at) 5 feet, footmarks (frequency belts) line 1 (11 & 95ft), line 2 (34ft), line 3 (59ft), line4 (71ft).

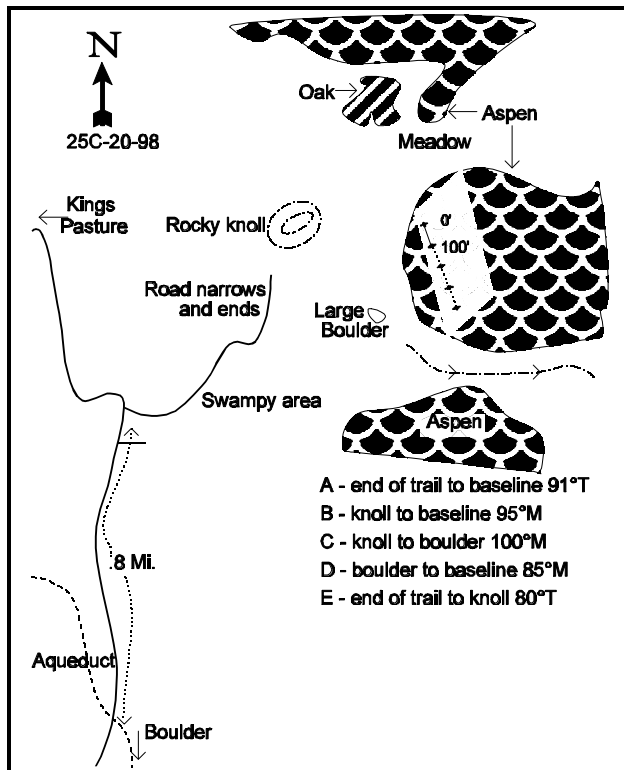
### LOCATION DESCRIPTION

From SR 12 north of Boulder, turn onto the Garkane Power Plant road. Travel 1.8 miles to a fork, and go right toward Kings Pasture. Proceed 1.2 miles to a cattleguard and pipeline crossing. Continue 0.8 miles to a fork at a sharp curve in the road. Be sure to take the second fork, just 150-200 feet before the correct fork is another minor fork. Go 0.2 miles up a rocky road. Park truck at the creek, then walk across the creek and marshy area and follow the old road up the hill to the northeast. At the end of the road/trail where it tops out on the hill, take bearings to the clump of aspens where the study is located. The rocky knoll is a small knoll. The aspen stand contains a spruce along line 2 and there are no other conifers around. From the knoll to the site is approximately 600 feet. It is marked by short fenceposts. The 0-foot baseline stake is tagged #7172.



Map Name: Grover, Utah (15')

Township 32S , Range 4E , Section Unsurveyed



Diagrammatic Sketch

UTM 4207785.901 N, 462387.740 E

## DISCUSSION

### Trend Study No. 25C-20 (44-20)

The Baldy's trend study samples a small aspen grove on deer and elk summer range in the Baldy's area below the rim of Boulder Mountain. It is separated from nearby groves of aspen by rolling meadows dominated by low rabbitbrush and grasses. Elevation at the study site is 9,600 feet with a southwest aspect on a 10 to 20% slope. The area receives considerable use by both elk and cattle and is considered a key area for elk during the summer. Pellet group frequency data indicates equal numbers of elk pellet groups and livestock pats in 1994. Pellet group data from 1998 estimate 7 deer, 32 elk, and 114 cow days use/acre. Most of the cow pats were older, but cattle are currently in the area. About 12 elk were also seen near the site during the 1998 reading. This area is in a deferred rotation grazing system with use occurring from mid June to mid October.

Soil at the site is moderately deep with an effective rooting depth (see methods) of almost 14 inches. Rocks of volcanic origin are common on soil surface, with some large rocks scattered throughout the soil profile. Parent material is a basalt. Soil texture is a sandy loam with a slightly acid pH (6.1). Soil organic matter is the highest on the unit at 6.1%. An organic matter rich "A" horizon is detectable to a depth of 6 inches. Although the terrain has a slope of about 10% to 20%, erosion is not a problem due to excellent ground cover. Historically heavy grazing is evidenced by the gullies which are common in the meadow areas, but the few observed in the aspen are no longer active.

An overstory of mature aspen characterizes the site. About half of the aspen was considered mature in 1987 and 1991. Line intercept data from 1994 and 1998 estimate an aspen canopy cover of 80% and 76% respectively. There were an estimated 866 trees/acre in 1987 and 799 in 1991. The young trees, averaging two feet in height, were moderately utilized in 1991. Aspen density data on the shrub density strips was mistakenly not collected in 1994. During the 1998 reading, aspen density was estimated at 700 plants/acre, 69% of which were classified as mature. The decadent aspen are young trees which appear to have been hedged in the past. Point quarter data from 1998 estimates 428 mature trees/acre with an average trunk diameter of 9.2 inches.

The shrub understory is dominated by snowberry which provided 82% of the shrub cover in 1998. These plants numbered about 2,399 plants/acre in 1987, increasing to 6,266 in 1991. The much larger sample used in 1994 and 1998 estimated 5,780 and 5,080 plants/acre respectively. The majority of the population is mature, although young plants remain abundant. Utilization of snowberry was moderate to heavy in 1987 and 1991, but mostly light in 1994 and 1998. Wood's rose is the second most abundant understory species with an estimated density of 1,540 plants/acre in 1998. Utilization is currently light.

The herbaceous understory is the most important component of this summer range. Tree and shrub cover have a limiting effect on grass frequency. Although grasses are diverse, only 4 species occur more than occasionally. Kentucky bluegrass, an increaser with heavy grazing, is the most abundant and it currently provides 57% of the grass cover. Mutton bluegrass, obtuse sedge, and sheep fescue are also fairly common. Diversity of forbs is also good, with at least 19 perennial species sampled each year. Composition is poor however, with low growing increasers including western yarrow, trailing fleabane, and dandelion providing 49% of the forb cover. Other undesirable increaser forbs found on the site include the poisonous orange sneezeweed and Rocky Mountain iris. Other common forbs include: thickleaf peavine, silvery lupine and American vetch.

### 1991 TREND ASSESSMENT

Basic cover measurements have not changed much since 1987. Vegetative basal cover was unchanged. Rock and litter cover were also almost the same as before. Percent bare ground has increased from 2% to 5%. This is still a very low percentage for bare ground, so trend for soil is considered stable. There are not many

browse species in very high frequencies on this site. Snowberry and aspen would be considered the most important. Aspen has decreased in numbers by 8%, while snowberry has increased by 62%. Percent decadency for both species is still low. Overall, trend for browse is up. The overall trend for herbaceous understory is stable. The sum of nested frequency of grasses has increased while frequency of forbs has declined slightly.

#### TREND ASSESSMENT

soil - stable

browse - up

herbaceous understory - stable

#### 1994 TREND ASSESSMENT

Ground cover characteristics are similar to those of 1991. Bare ground has declined slightly. Trend for soil is stable. Trend for browse is also stable. Aspen was mistakenly not sampled in the shrub belt inventories in 1994, so no comparisons can be made. However, snowberry and Wood's rose show stable trends. The herbaceous understory is diverse and abundant with nearly equal amounts of grasses and forbs. Composition could be better however. The increaser, Kentucky bluegrass, dominates the grass component while the most numerous forbs consist of the increasers yarrow, orange sneezeweed, silvery lupine, and dandelion. Sum of nested frequencies for grasses and forbs have declined since 1991 indicating a downward trend.

#### TREND ASSESSMENT

soil - stable

browse - stable

herbaceous understory - downward and dominated by increasers

#### 1998 TREND ASSESSMENT

Trend for soil is stable with similar ground cover characteristics between readings. Trend for browse is considered stable for understory shrubs, snowberry and Wood's rose. The aspen component on this site is overly mature with poor reproduction. Density of mature trees is currently stable but the proportion of young plants has steadily declined since 1987. Aspen does not provide an important forage source on this site due to the lack of available forage, but the health of the site depends on the aspen overstory. Trend for the herbaceous understory is up, although the composition is poor. Sum of nested frequency of grasses declined slightly while frequency of forbs increased dramatically. Kentucky bluegrass is still the most abundant grass and it increased significantly in nested frequency. Weedy increaser forbs including western yarrow, trailing fleabane, Orange sneezeweed, and dandelion, currently produce 59% of the forb cover. There are few of the late successional aspen community forbs present like sweetanise (*Osmorhiza occidentalis*), tall larkspur, meadowrue (*Thalictrum fendleri*) and wild carrot (*Ligusticum filicinum*). Production is up however, with grass cover increasing from 8% in 1994 to 14% by 1998. Forb cover increased from 8% to 26%.

#### TREND ASSESSMENT

soil - stable

browse - stable

herbaceous understory - up, but poor composition

HERBACEOUS TRENDS --  
Herd unit 25C, Study no: 20

T y p e	Species	Nested Frequency				Quadrat Frequency				Average Cover %	
		'87	'91	'94	'98	'87	'91	'94	'98	'94	'98
G	Agropyron trachycaulum	13	7	17	8	7	6	9	5	.09	.19
G	Bouteloua gracilis	-	-	1	-	-	-	1	-	.00	-
G	Bromus anomalus	<sub>ab</sub> 8	<sub>b</sub> 18	<sub>ab</sub> 9	<sub>a</sub> 3	4	10	4	1	.33	.00
G	Bromus carinatus	<sub>a</sub> -	<sub>b</sub> 9	<sub>a</sub> -	<sub>a</sub> -	-	4	-	-	-	.03
G	Carex obtusata	<sub>a</sub> 66	<sub>b</sub> 126	<sub>ab</sub> 87	<sub>a</sub> 76	23	47	33	37	.78	1.42
G	Dactylis glomerata	<sub>b</sub> 16	<sub>a</sub> -	<sub>a</sub> 1	<sub>a</sub> -	7	-	1	-	.00	-
G	Festuca ovina	<sub>b</sub> 101	<sub>b</sub> 86	<sub>a</sub> 31	<sub>a</sub> 45	42	40	15	19	.27	1.31
G	Festuca thurberi	-	-	2	-	-	-	2	-	.03	-
G	Juncus balticus	<sub>bc</sub> 38	<sub>c</sub> 47	<sub>b</sub> 34	<sub>a</sub> -	20	24	12	-	.56	-
G	Koeleria cristata	-	-	4	-	-	-	1	-	.00	-
G	Muhlenbergia richardsonis	<sub>a</sub> -	<sub>b</sub> 10	<sub>a</sub> -	<sub>b</sub> 13	-	5	-	4	-	.48
G	Poa fendleriana	<sub>a</sub> 32	<sub>a</sub> 1	<sub>b</sub> 87	<sub>b</sub> 80	14	1	33	28	2.87	2.12
G	Poa pratensis	<sub>a</sub> 134	<sub>b</sub> 193	<sub>a</sub> 121	<sub>a</sub> 143	54	71	42	47	1.90	7.86
G	Sitanion hystrix	<sub>a</sub> 12	<sub>b</sub> 40	<sub>b</sub> 45	<sub>a</sub> 6	8	19	21	5	.61	.12
G	Stipa columbiana	<sub>a</sub> -	<sub>a</sub> -	<sub>a</sub> -	<sub>b</sub> 16	-	-	-	6	-	.13
G	Stipa comata	1	1	-	-	1	1	-	-	-	-
G	Stipa lettermani	<sub>ab</sub> 59	<sub>ab</sub> 24	<sub>b</sub> 40	<sub>a</sub> 14	24	12	18	5	.55	.12
Total Annual Grasses		0	0	0	0	0	0	0	0	0	0
Total Perennial Grasses		480	562	479	404	204	240	192	157	8.05	13.81
F	Achillea millefolium	<sub>b</sub> 154	<sub>b</sub> 140	<sub>a</sub> 66	<sub>a</sub> 126	60	56	27	49	1.16	3.59
F	Agoseris glauca	-	-	-	4	-	-	-	1	-	.03
F	Allium cernuum	<sub>c</sub> 62	<sub>b</sub> 28	<sub>a</sub> 10	<sub>a</sub> 14	29	16	5	5	.10	.10
F	Antennaria parvifolia	13	14	17	30	5	7	7	10	.11	.58
F	Androsace septentrionalis (a)	-	-	3	9	-	-	2	3	.01	.16
F	Artemisia dracunculus	-	-	-	5	-	-	-	2	-	.01
F	Arabis drummondi	<sub>a</sub> 3	<sub>b</sub> 24	<sub>a</sub> -	<sub>a</sub> -	2	12	-	-	-	-
F	Artemisia ludoviciana	2	-	-	-	2	-	-	-	-	-
F	Aster chilensis	<sub>ab</sub> -	<sub>c</sub> 23	<sub>b</sub> 4	<sub>b</sub> 19	-	9	2	8	.03	.06
F	Astragalus convallarius	-	-	-	5	-	-	-	2	-	.18
F	Chenopodium album (a)	-	-	<sub>a</sub> 4	<sub>b</sub> 12	-	-	3	4	.01	.07
F	Cirsium vulgare	5	-	3	3	2	-	1	1	.06	.03
F	Collomia linearis (a)	-	-	-	2	-	-	-	1	-	.00
F	Cymopterus lemmonii	<sub>bc</sub> 33	<sub>c</sub> 40	<sub>ab</sub> 12	<sub>a</sub> 1	16	18	8	1	.09	.01
F	Descurainia spp. (a)	-	-	-	5	-	-	-	2	-	.03
F	Erigeron flagellaris	25	12	24	27	13	6	11	11	.20	1.06
F	Erigeron spp.	<sub>b</sub> 18	<sub>ab</sub> 4	<sub>a</sub> -	<sub>a</sub> 3	7	2	-	1	-	.00
F	Eriogonum racemosum	-	3	-	-	-	1	-	-	-	-
F	Gentiana amarella heterosepala	-	2	-	-	-	1	-	-	-	-

T y p e	Species	Nested Frequency				Quadrat Frequency				Average Cover %	
		'87	'91	'94	'98	'87	'91	'94	'98	'04	'08
F	Geranium richardsonii	36	26	34	29	21	16	16	14	.49	.28
F	Helenium hoopesii	34	33	32	41	19	19	16	17	.81	2.51
F	Iris missouriensis	21	17	8	24	7	8	3	11	.21	.42
F	Lathyrus lanszwertii	a-	a-	b20	c58	-	-	8	19	1.14	3.83
F	Lomatium spp.	-	-	-	4	-	-	-	2	-	.15
F	Lupinus argenteus	a7	ab12	bc25	c39	5	6	16	23	1.26	2.32
F	Lychnis drummondii	-	-	-	2	-	-	-	1	-	.00
F	Osmorhiza occidentalis	-	-	-	7	-	-	-	3	-	.01
F	Penstemon spp.	a1	a-	b10	a-	1	-	6	-	.03	-
F	Phacelia spp.	-	2	-	-	-	1	-	-	-	-
F	Phlox austromontana	a-	ab3	c34	b15	-	1	16	8	.76	.60
F	Potentilla anersina	-	-	5	1	-	-	2	1	.03	.03
F	Polygonum douglasii (a)	-	-	8	13	-	-	4	5	.02	.16
F	Potentilla gracilis	a-	ab1	b12	ab4	-	1	5	1	.48	.06
F	Senecio multilobatus	b8	a-	b11	b12	4	-	6	4	.05	.07
F	Taraxacum officinale	b224	b221	a121	b199	81	81	45	71	.97	8.17
F	Trifolium repens	1	-	-	-	1	-	-	-	-	-
F	Unknown forb-perennial	4	-	-	-	2	-	-	-	-	-
F	Vicia americana	a68	ab73	a42	b97	28	32	18	41	.24	1.62
F	Viola spp.	-	3	-	4	-	1	-	2	-	.03
Total Annual Forbs		0	0	15	41	0	0	9	15	0.04	0.42
Total Perennial Forbs		719	681	490	773	305	294	218	309	8.28	25.86

Values with different subscript letters are significantly different at  $\alpha = 0.10$

#### BROWSE TRENDS --

Herd unit 25C, Study no: 20

T y p e	Species	Strip Frequency		Average Cover %	
		'04	'08	'04	'08
B	Amelanchier alnifolia	8	0	.44	-
B	Chrysothamnus nauseosus	0	0	-	-
B	Populus tremuloides	0	29	.53	1.82
B	Ribes inerme	1	0	.00	-
B	Rosa woodsii	19	29	.37	1.15
B	Symphoricarpos oreophilus	61	75	9.61	13.44
Total for Browse		89	133	10.96	16.42

#### CANOPY COVER --

Herd unit 25C, Study no: 20

Species	Percent Cover '08
Populus tremuloides	76

# BASIC COVER --

Herd unit 25C, Study no: 20

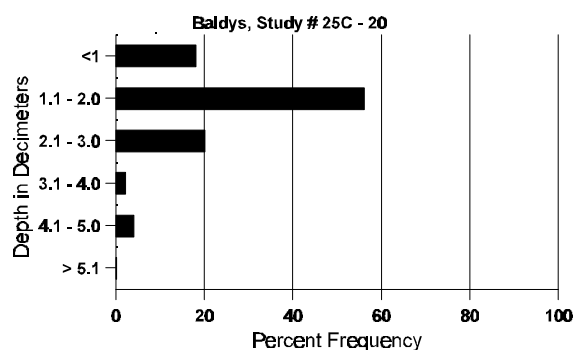
Cover Type	Nested Frequency		Average Cover %			
	'94	'98	'87	'91	'94	'98
Vegetation	258	352	4.00	3.50	23.52	49.69
Rock	118	90	8.25	6.25	7.95	5.89
Pavement	17	45	0	0	.45	1.04
Litter	317	400	85.75	85.25	79.11	81.25
Cryptogams	-	6	0	.25	0	.03
Bare Ground	64	75	2.00	4.75	3.36	4.92

# SOIL ANALYSIS DATA --

Herd Unit 25C, Study # 20, Study Name: Baldys

Effective rooting depth (inches)	Temp °F (depth)	pH	%sand	%silt	%clay	%OM	PPM P	PPM K	dS/m
13.5	43.2 (14.5)	6.1	62.7	16.7	20.6	6.1	28.4	329.6	.6

# Stoniness Index



# PELLET GROUP FREQUENCY --

Herd unit 25C, Study no: 20

Type	Quadrat Frequency	
	'94	'98
Rabbit	1	-
Elk	3	12
Deer	1	5
Cattle	3	5

## BROWSE CHARACTERISTICS --

Herd unit 25C, Study no: 20

Herb Unit 25C, Study No. 20																		
A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Amelanchier alnifolia																		
M	'87	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	'91	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	'94	4	15	-	-	-	-	2	-	-	21	-	-	-	420	10	6	21
	'98	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
% Plants Showing		<u>Moderate Use</u>				<u>Heavy Use</u>				<u>Poor Vigor</u>				<u>%Change</u>				
'87		00%				00%				00%								
'91		00%				00%				00%								
'94		71%				00%				00%								
'98		00%				00%				00%								
Total Plants/Acre (excluding Dead & Seedlings)														'87	0	Dec:	-	
														'91	0		-	
														'94	420		-	
														'98	0		-	
Chrysothamnus nauseosus																		
S	'87	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	'91	1	-	-	-	-	-	-	-	-	1	-	-	-	66			1
	'94	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	'98	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
% Plants Showing		<u>Moderate Use</u>				<u>Heavy Use</u>				<u>Poor Vigor</u>				<u>%Change</u>				
'87		00%				00%				00%								
'91		00%				00%				00%								
'94		00%				00%				00%								
'98		00%				00%				00%								
Total Plants/Acre (excluding Dead & Seedlings)														'87	0	Dec:	-	
														'91	0		-	
														'94	0		-	
														'98	0		-	

A Y G R E	Form Class (No. of Plants)	Vigor Class									Plants Per Acre	Average (inches) Ht. Cr.			Total		
		1	2	3	4	5	6	7	8	9		1	2	3		4	
Populus tremuloides																	
S	87	2	-	-	-	-	-	-	-	-	2	-	-	-	133		2
	91	2	-	-	-	-	-	-	-	-	2	-	-	-	133		2
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	98	15	-	-	-	-	-	-	-	-	15	-	-	-	300		15
Y	87	1	3	2	-	-	-	-	-	-	6	-	-	-	400		6
	91	-	5	-	-	-	-	-	-	-	3	-	1	1	333		5
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	98	6	3	-	-	-	-	-	-	-	9	-	-	-	180		9
M	87	-	-	-	-	-	-	-	6	-	6	-	-	-	400	341 144	6
	91	-	-	-	-	-	-	2	5	-	7	-	-	-	466	355 124	7
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0	- -	0
	98	-	-	-	-	-	-	-	24	-	24	-	-	-	480	- -	24
D	87	-	-	1	-	-	-	-	-	-	-	-	1	-	66		1
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	98	-	2	-	-	-	-	-	-	-	-	-	-	2	40		2
X	87	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	98	-	-	-	-	-	-	-	-	-	-	-	-	-	120		6
% Plants Showing																	
		Moderate Use			Heavy Use			Poor Vigor			%Change						
		'87			23%			23%			08%			- 8%			
		'91			42%			00%			17%						
		'94			00%			00%			00%						
		'98			14%			00%			06%						
Total Plants/Acre (excluding Dead & Seedlings)																	
											'87	866	Dec:		8%		
											'91	799			0%		
											'94	0			0%		
											'98	700			6%		
Ribes inerme																	
M	87	1	-	-	-	-	-	-	-	-	1	-	-	-	66	30 39	1
	91	1	-	-	-	-	-	-	-	-	1	-	-	-	66	35 55	1
	94	3	-	-	-	-	-	-	-	-	3	-	-	-	60	19 63	3
	98	-	-	-	-	-	-	-	-	-	-	-	-	-	0	- -	0
% Plants Showing																	
		Moderate Use			Heavy Use			Poor Vigor			%Change						
		'87			00%			00%			00%			+ 0%			
		'91			00%			00%			00%			- 9%			
		'94			00%			00%			00%						
		'98			00%			00%			00%						
Total Plants/Acre (excluding Dead & Seedlings)																	
											'87	66	Dec:		-		
											'91	66			-		
											'94	60			-		
											'98	0			-		

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Rosa woodsii																		
S	87	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	91	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	94	1	-	-	-	-	-	-	-	-	1	-	-	20			1	
	98	12	-	-	-	-	-	-	-	-	12	-	-	240			12	
Y	87	1	-	-	-	-	-	-	-	-	1	-	-	66			1	
	91	1	-	-	-	-	-	-	-	-	1	-	-	66			1	
	94	20	-	-	-	-	-	-	-	-	20	-	-	400			20	
	98	27	1	-	-	-	-	-	-	-	28	-	-	560			28	
M	87	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0	
	91	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0	
	94	46	-	-	-	-	-	-	-	-	46	-	-	920	14	11	46	
	98	47	-	-	-	-	-	-	-	-	47	-	-	940	20	15	47	
D	87	-	-	1	-	-	-	-	-	-	1	-	-	66			1	
	91	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	94	1	-	-	-	-	-	-	-	-	1	-	-	20			1	
	98	2	-	-	-	-	-	-	-	-	2	-	-	40			2	
X	87	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	91	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	20			1	
	98	-	-	-	-	-	-	-	-	-	-	-	-	20			1	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'87		00%			50%			00%			-50%							
'91		00%			00%			00%			+95%							
'94		00%			00%			00%			+13%							
'98		01%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'87	132	Dec:	50%			
												'91	66		0%			
												'94	1340		1%			
												'98	1540		3%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Symphoricarpos oreophilus																		
S	87	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1	
	91	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1	
	94	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1	
	98	4	-	-	2	-	-	-	-	-	6	-	-	-	120		6	
Y	87	4	4	3	-	-	-	-	-	-	11	-	-	-	733		11	
	91	23	5	-	1	-	-	-	-	-	28	-	1	-	1933		29	
	94	20	-	-	-	-	-	-	-	-	20	-	-	-	400		20	
	98	57	5	-	-	-	-	-	-	-	62	-	-	-	1240		62	
M	87	1	18	6	-	-	-	-	-	-	25	-	-	-	1666	18 27	25	
	91	25	18	6	3	1	-	-	-	-	52	-	1	-	3533	16 24	53	
	94	261	8	-	-	-	-	-	-	-	269	-	-	-	5380	16 24	269	
	98	190	-	1	-	-	-	-	-	-	191	-	-	-	3820	20 29	191	
D	87	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	91	5	3	1	3	-	-	-	-	-	10	-	1	1	800		12	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	98	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1	
X	87	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	98	-	-	-	-	-	-	-	-	-	-	-	-	-	20		1	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'87		61%			25%			00%			+62%							
'91		29%			07%			04%			- 8%							
'94		03%			00%			00%			-12%							
'98		02%			.39%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'87	2399	Dec:	0%			
												'91	6266		13%			
												'94	5780		0%			
												'98	5080		0%			